

REMARKS

In the final Office Action, claims 1, 3, 5, 7, 9, 12, 13 and 16-20 were finally rejected under 35 U.S.C. §103(a) as being unpatentable over Houlihan in view of Gloton. Claims 2, 4, 6 and 10 were finally rejected under 35 U.S.C. §103(a) as being unpatentable over Houlihan in view of Gloton and Liebendoerfer. Claim 14 was finally rejected under 35 U.S.C. §103(a) as being unpatentable over Houlihan in view of Gloton and Liebendoerfer.

By this amendment, applicants have amended independent claim 1 to further recite that the chip antenna comprises a substrate and an antenna pattern on the substrate and has directivity in one direction that is substantially perpendicular to the antenna pattern to minimize interference caused by the user's arm. Newly added claims 21-34 have been drafted to recite, in independent claim 21, that the dielectric chip antenna has directivity only in a direction opposing the user's arm when the device is being worn on the user's arm.

Applicants respectfully submit that the arm wearable communication device recited by claims 1-7, 9, 10, 12, 13 and 16-34 patentably distinguishes over the prior art of record.

In the arm wearable communication device of the present invention, when the device is detached from the user's

arm and held in the user's hand, as well as when it is being worn on the user's arm, the influence of the human body is avoided so that superior telecommunication becomes possible. In addition, the arm wearable communication device is free from the electric wave shielding effect caused by coating. Also, by paying attention to the disposition of the antennas each having optimal directivity when the device is being worn on the user's arm and when it is being held by the user's hand, the chip antennas each of which has a flat shape and has a single directivity are accommodated in the wearable bodies, respectively. As a result, antenna transmission and reception characteristics are adapted to conditions of actual use.

No corresponding structure is disclosed or suggested by the prior art of record.

Independent claim 1 recites an arm wearable communication device comprising a case, a wireless communication circuit contained in the case, a wearable body pivotally mounted to the case, a sound unit provided in the wearable body, and a chip antenna disposed between the sound unit and the wireless communication circuit in the wearable body and comprising a substrate and an antenna pattern on the substrate, the chip antenna having directivity in one direction that is substantially perpendicular to the antenna pattern to minimize interference caused by the user's arm.

Newly added independent claim 21 recites that the chip antenna is provided in the wearable body and has directivity only in a direction opposing the user's arm when the device is being worn on the user's arm.

Houlihan, as modified by Gloton, fails to render the claimed invention obvious. Houlihan discloses an arm wearable communication device 10 comprising a wireless communication circuit contained in a housing 20b for transmitting and receiving a signal and a sound unit 52 provided in a wearable body. Houlihan does not disclose the structure and features of the claimed chip antenna. U.S. Patent No. 4,847,818 to Olsen, which is incorporated by reference into the Houlihan disclosure, discloses conductor pairs 13, 14 serving as a dipole antenna embedded in the wearable body 5. However, the dipole antenna of Olsen does not disclose or suggest the structure and features of the chip antenna required by independent claims 1 and 21, and it is not disposed between the sound unit 52 and the communication device body in the wearable body.

The combination of Houlihan, Gloton and Liebendoerfer do not render unpatentable the subject matter of claims 1-7, 9, 10, 12, 13 and 16-34.

In view of the foregoing amendments and discussion, the application is now believed to be in condition for

allowance. Accordingly, favorable reconsideration and allowance of the claims are most respectfully requested.

Respectfully submitted,

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Name

Signature

March 12, 2004

Date